EC axial fan

sickle-shaped blades (S series)

with guard grille for full nozzle

S3G500-BE33-11 ebmpapst Datasheet
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Nominal data

Type	**S3G500-BE33-11**
Motor	**M3G112-GA**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	1250
Power consumption	W	690
Current draw	A	3.1
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	60

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

Data according to ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	36.4	32.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		43.9	40
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.65
09 Air flow q_v	m^3/h	5150
09 Pressure increase p_{fs}	Pa	153
10 Speed (rpm) n	min^{-1}	1260
11 Specific ratio*		1.00

Data obtained at optimum efficiency level.
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

LU-104863

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Technical description

Weight	11.4 kg
Fan size	500 mm
Rotor surface	Cast in PA plastic
Electronics housing material	Die-cast aluminum, painted black
Guard grille material	Steel, coated with black plastic (RAL 9005)
Number of blades	5
Airflow direction	"V"
Direction of rotation	Counterclockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	F4-1
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Input for sensor 0-10 V or 4-20 mA - Alarm relay - Integrated PID controller - Motor current limitation - PFC, active - RS-485 ebmBUS - Soft start - Control input 10-0 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Via terminal box
Motor protection	Thermal overload protector (TOP) internally connected
Protection class	I (according to EN 61800-5-1)
Conformity with standards	EN 61800-5-1; CE

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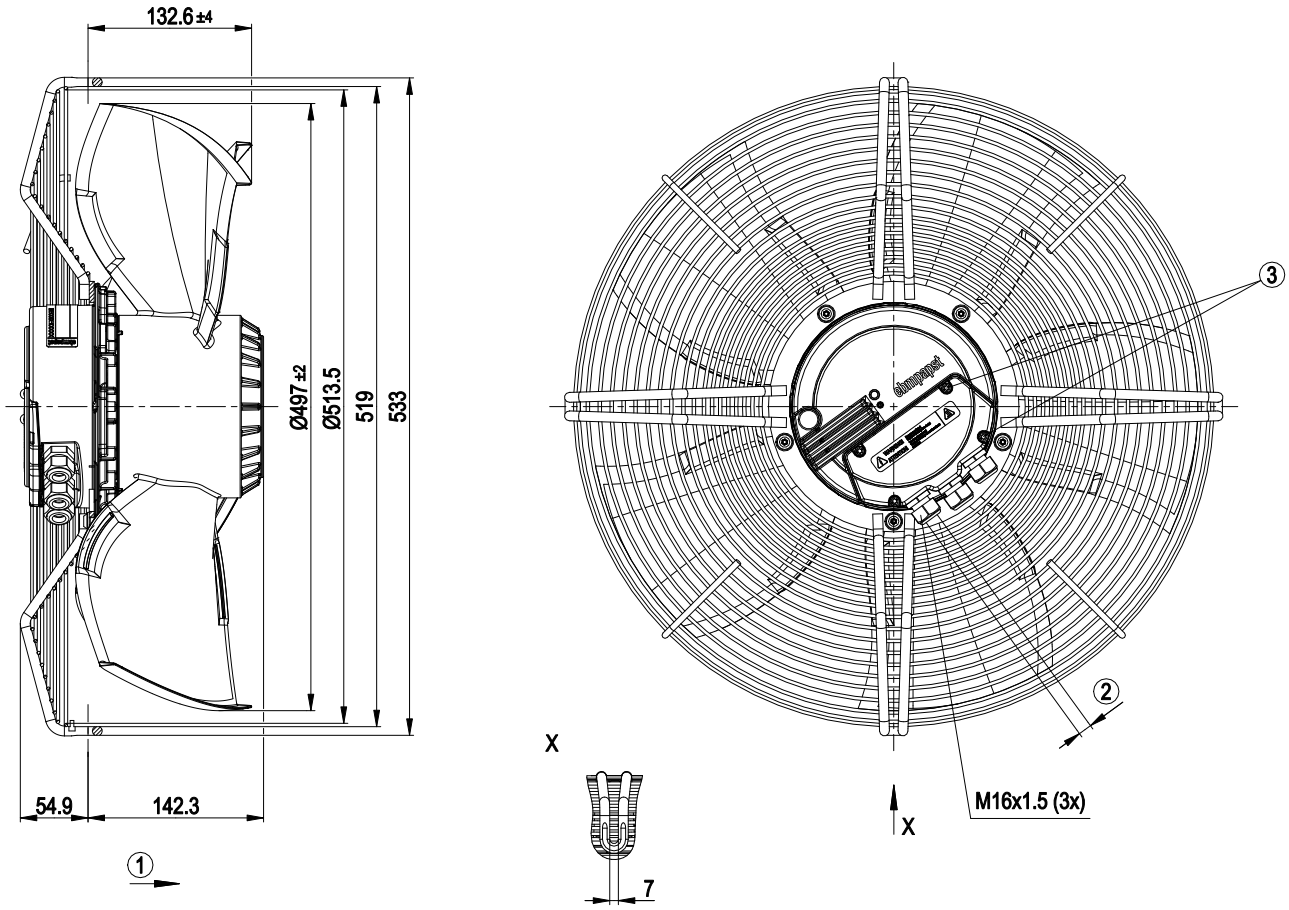
Product drawing



1	Direction of air flow "V"
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 2.5 ± 0.4 Nm
3	Tightening torque 3.5 ± 0.5 Nm

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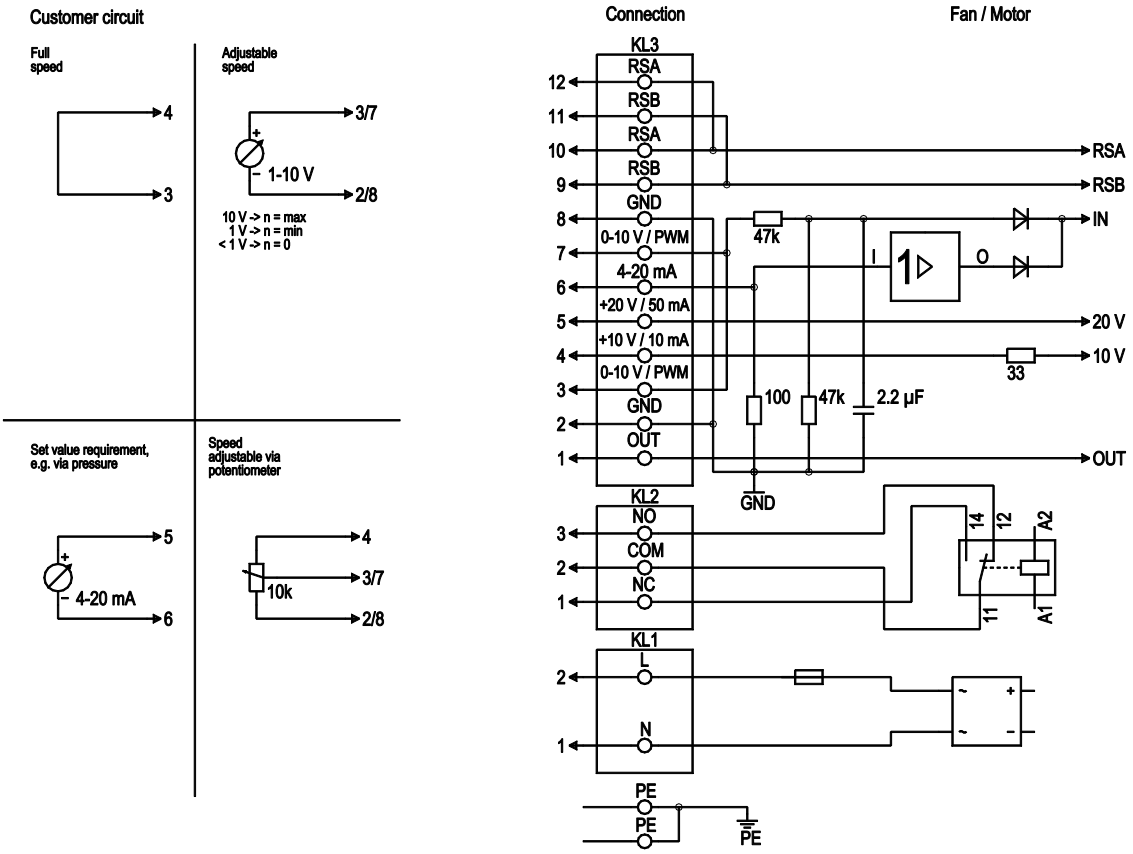
Connection diagram



No.	Conn.	Designation	Function/assignment
PE		PE	Protective earth terminal
KL1	1, 2	N, L	Power supply 50/60 Hz
KL2	1	NC	Floating status contact, break for failure
KL2	2	COM	Floating status contact, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1)
KL2	3	NO	Floating status contact, make for failure
KL3	1	OUT	Analog output, 0-10 VDC, max. 3 mA, SELV, output of current motor modulation level: 1 V corresponds to 10% modulation level. 10 V corresponds to 100% modulation level.
KL3	2, 8	GND	Reference ground for control interface, SELV
KL3	3, 7	0-10 V	Use control / current sensor value input 0-10 VDC, impedance 100 kΩ only as alternative to 4-20 mA input, SELV
KL3	4	+10 V	Voltage output 10 VDC (±3 %), max. 10 mA, power supply for external devices (e.g. potentiometer), SELV
KL3	5	+20 V	Voltage output 20 VDC (+25% / -10%), max. 50 mA, power supply for external devices (e.g. sensors); SELV
KL3	6	4-20 mA	Use control / current sensor value input 4-20 mA, impedance 100 Ω only as alternative to 0-10 V input, SELV
KL3	9, 11	RSB	RS485 interface for ebmBUS, RSB, SELV
KL3	10, 12	RSA	RS485 interface for ebmBUS, RSA, SELV

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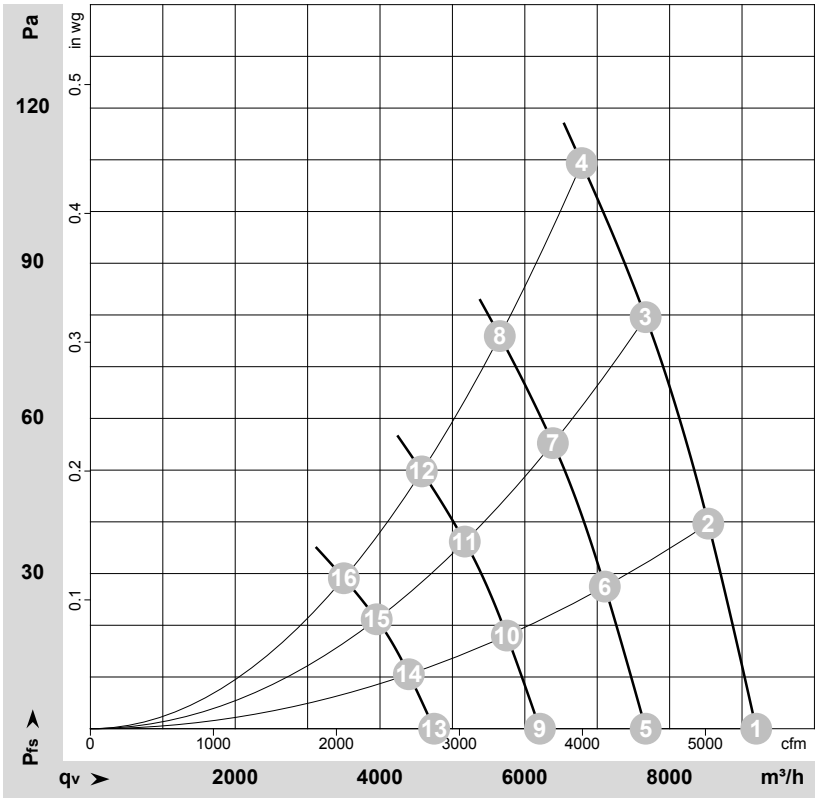
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-104863-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

Measured values

	U	f	n	P_{ed}	I	LpA_{in}	LwA_{in}	LwA_{out}	q_V	p_{fs}	q_V	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	cfm	inH2O
1	230	50	1250	612	2.79	68	74	74	9195	0	5415	0.00
2	230	50	1250	653	2.95	69	75	74	8535	40	5025	0.16
3	230	50	1250	682	3.07	70	76	75	7670	80	4515	0.32
4	230	50	1250	690	3.10	70	77	76	6785	110	3995	0.44
5	230	50	1050	355	1.62	63	69	69	7670	0	4515	0.00
6	230	50	1050	376	1.70	64	70	70	7105	28	4180	0.11
7	230	50	1050	394	1.78	65	71	71	6385	55	3760	0.22
8	230	50	1050	404	1.82	66	72	71	5655	76	3330	0.31
9	230	50	850	188	0.86	58	64	64	6210	0	3655	0.00
10	230	50	850	200	0.90	59	65	64	5750	18	3385	0.07
11	230	50	850	209	0.94	60	66	65	5170	36	3045	0.14
12	230	50	850	214	0.96	60	67	66	4575	50	2695	0.20
13	230	50	650	84	0.38	51	57	57	4750	0	2795	0.00
14	230	50	650	89	0.40	52	58	58	4400	11	2590	0.04
15	230	50	650	94	0.42	53	59	58	3955	21	2325	0.08
16	230	50	650	96	0.43	54	60	59	3500	29	2060	0.12

U = Power supply · f = Frequency · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
LwA_{out} = Sound power level outlet side · q_V = Air flow · p_{fs} = Pressure increase